



The Aeronautical Newsletter of the Seattle Flight Standards District Office

1601 Lind Ave., SW, Suite 260
Renton, WA 98055
www.faa.gov/fsdo/seafsdo

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VISITATION RIGHTS

As a result of the September 11 attacks, the FAA has instituted stricter security measures for its buildings, employees and customers. If you come to visit us, the first thing you will notice is that most times you will not be allowed to park in our parking lot. You will have to find off site parking, and walk in. We have made arrangements with the Boeing Company, and you are welcome to park in their "Flash Cube Buildings" (just east of the FAA building) parking lot. Pick a space in the far western reaches of their lot and cross 16th street to the FAA building.

The next thing you will notice is that all visitors need to be escorted while in the building. The FSDO has instituted a requirement whereby all customers wishing to conduct business with FSDO employees are required to make an appointment prior to arriving. This is so that we can assign a FSDO employee to be available to escort you when you arrive. This new requirement is expected to remain in effect for the foreseeable future. We **will** report here when the requirement expires.

To make an appointment please call the office at **(425) 227-2813 or (800) 354-1940**, and follow the prompts to speak with the person on duty.

Additional information is available from our web site at: www.faa.gov/fsdo/seafsdo.

So, please call and make an appointment prior to coming to the office. We have no authority to deviate from this requirement.

ENHANCED BRAVO AIRSPACE

AeroSafe has decided NOT to report on the current status of tightened security in what is being called "Enhanced Bravo Airspace." This is because it takes us five weeks to get AeroSafe into your mailbox, and the changes to the Enhanced Bravo Airspace requirements are happening almost daily.

We have found www.aopa.org www.eaa.org www.avweb.com and www.landings.com are places we like to go to get the latest information on the subject. There may be others.

TEMPORARY FLIGHT RESTRICTIONS

Temporary Restricted Areas have been created where none existed before. These areas are considered essential for national security and are guarded by our military. Pilots violating these areas are subject to military intercept and escort and FAA certificate action. If intercepted, you will be directed to land at the nearest suitable airport. Sev-

eral flights have been intercepted around Western Washington.

These TFRs are NOT depicted on charts. We strongly encourage you to check NOTAMS for the current location, size, and status of these Temporary Restricted Areas prior to every flight.

PRACTICAL DENSITY ALTITUDE

This series was inspired by NTSB accident investigator Kurt Anderson who has investigated general aviation accidents within the 7 northwestern states for 15 years. Density Altitude is the number one cause of fatal general aviation airplane accidents within those 7 northwestern states. Kurt Anderson has, by interviewing pilots who survive such accidents, identified 10 Deadly Sins. 10 things that pilots either didn't learn correctly or mistakes that pilots commonly make that are leading to our number one fatal accident cause. Although density altitude is not much of a problem in Western Washington, we bring them to you because all you have to do is fly east to Idaho to discover just how demanding Density Altitude flying can be.

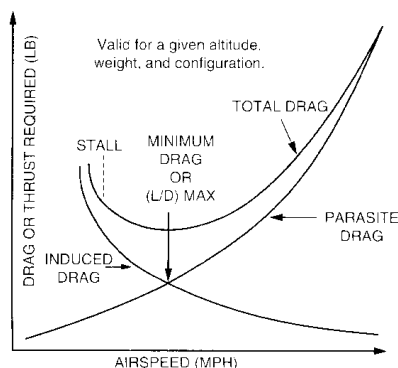
I would like to back up to Deadly Sin number 3 (November, 2000). It seems when I originally wrote about number 3, I just didn't get it. Oh, I understood the concept, but I

didn't give it the proper emphasis. I want to fix that now.

The situation in Deadly Sin number 3 was the need for a course reversal to fly out of a tight, blind canyon situation. The pilot had waited far too long to initiate the turn and now needs to make a tight radius, 180 degree turn, **without losing any altitude**. Kurt warned about trying to reduce your aircraft's turn radius by slowing waaaay down.

Since I just didn't get it, I failed to discuss how induced drag increases as bank angle increases. In his lecture, Kurt points out that a 30 degree angle of bank will increase induced drag by 33 percent, a 45 degree angle of bank will increase induced drag by 100 percent, and that in a 60 degree bank induced drag will increase by 300 percent!!!

Now, please study the following chart:



It's the good old Lift over Drag Max chart. Notice that to the right of the L/D max point, induced drag is a relatively small part of the total drag. But to the left of the L/D max point, induced drag is a very large part of the total drag. Near stall, induced drag makes up a HUGE percentage of the total drag.

Next, assume you decide to slow to some speed close to stall because

after all, the slower the speed the tighter the radius of the turn, right? And you need a tight radius turn to get out of this bloody canyon. Keep in mind that in a 45 degree bank, induced drag increases by 100 percent.

Now notice that we have perhaps, always referred to the chart by its wrong name. Look along the vertical line on the left and notice that this chart might be better called the Thrust Required Chart.

At a near stall situation, induced drag amounts to approximately 80 percent of the total drag. If we try to use a 45 degree bank in this situation we will double the induced drag, which increases the total amount of thrust required by 90 percent. This means we would need to increase total thrust by 90 percent to maintain level flight. In situations where you are flying near stall on an 80 degree day at 8,000 feet MSL, how many times do you have a spare 90 percent unused thrust available?

What Kurt is saying (and what I did not say very well last time) is that when pilots delay their escape turn too long, then try to reverse course using a steep, constant altitude turn, at very slow speeds, they are asking their airplanes to do something they **simply cannot do!** All too often the airplanes don't make the turn, stall, and crash into the side of the canyon.

Just like last time, our advice is to use best rate of climb speed for the density altitude and make the turn long before the canyon becomes confined. Make the turn early enough that a shallow bank is all that's necessary to complete the turn. Better yet, **STAY OUT OF THOSE CANYONS**. The only time you'll ever see your AeroSafe staff maneuvering within the con-

fines of a canyon is shortly before landing at an airport located within the canyon, or shortly after taking off from an airport located within the canyon. And even then, there has to be a pretty darn good reason for going to that airport. Other than that, you'll see us flying over the canyons, but never through them.

Thanks Kurt.

So, now we arrive at Density Altitude Deadly Sin Number 8 – **Using the wrong flap setting for take-off.**

Many light general aviation airplanes have a takeoff flap setting other than zero for operations on hard surfaced runways. When manufacturers recommend a takeoff flap setting other than zero (usually between 10 and 20 degrees) they do so reduce the ground roll. Use of the recommended flap setting works just fine when operating at near sea level altitudes.

But keep in mind that for airplanes powered by piston powered, non-turbo charged engines, there comes a density altitude above which the use of takeoff flaps actually **increases** ground roll. This is because the thrust available has deteriorated to the point where it is no longer capable of pulling the increased drag (as compared to flaps completely up) efficiently. This is exactly the situation you need to avoid when taking off from a high density altitude airport.

Thanks Kurt.

SOS for ELTs

A recent search for a downed airplane brought to light an interesting thought. If you are ever stuck in a situation where you want to

take advantage of Search and Rescue services, check to make sure your ELT is activated, then **leave it on!**

In this recent search, the search airplane was operating on top of a low fog situation. As luck would have it, they flew very near the crash. They knew they were close because they could hear the ELT signal from the downed aircraft. But it takes a while for the search aircraft to zero in on the signal from the aircraft in distress. Before the search crew could pin point the location, the signal from the downed aircraft stopped.

The search aircraft circled and made another pass over the area. Again, the search pilots heard the ELT signal. Again, just before the search crew could lock on to the signal, the signal stopped. NUTS!! It was later determined that the pilot of the downed aircraft was hurt and unable to reach the ELT. The passenger, who was not injured, was operating the ELT and was randomly turning it on and off. Our message to you is (assuming you are able) to make sure the ELT is turned on, then leave it on. Washington States' Aviation Division launches search aircraft after an aircraft is reported overdue, or after an ELT signal has been detected, verified, and pin pointed by satellite. Relying on the satellite to pin point the location can take as long as 2 hours. Once a search aircraft reaches the search area and receives the ELT signal, it may take an additional 15 minutes for the crew to pin point the location. So, turning the ELT on and off (perhaps in an attempt to save the battery?) is counter productive. ELT batteries are designed to operate for at least 72 hours.

According to Tom Jensen, Washington Air Search and Rescue vol-

unteer pilot, here are the Top Ten ways to assist Search and Rescue efforts:

10. National statistics show that ELTs help in locating downed aircraft about 12 per cent of the time. However, in Washington state, ELTs help in locating downed aircraft more than 50 percent of the time. Still search crews find that 95 per cent of ELT searches are false alarms.

9. File flight plans. An unclosed flight plan helps verify that any given ELT signal is real and gets search crews into action quicker.

8. ELT batteries should be replaced if the ELT accidentally transmits for more than 45 minutes.

7. Make sure your ELT is in a location where condensation can not drip on it.

6. If your ELT is in an exposed location in the aircraft, be sure it doesn't get accidentally tripped by your baggage handling.

5. Make sure your ELT is installed properly (look for the arrow) and securely mounted. Also, make sure the antenna is securely mounted. It is a good idea to have a "drip loop" (more than enough wire between the ELT unit and the antenna). This compensates when the distance between the ELT and the antenna increases in a crash due to aircraft structural bending and/ or breaking.

4. Position reports are a good idea.

3. Flight Following is a GREAT idea.

2. Brief your passengers as to where the ELT is located, what it is for, how it operates automatically, how to operate it manually, and

how to use the auxiliary antenna, if so equipped.

1. Listen to 121.5 occasionally during flight, and after landing. You may be surprised how often you can assist the Search and Rescue community by reporting ELT signals to Flight Service Stations.

The Air Search And Rescue program in Washington is made up of volunteers, and anyone can join. You don't have to be a pilot to be an observer, or to help in other ways. You do not need to own an airplane. To volunteer, contact the Washington State DOT Aviation Division at 1-800-552-0666. Four free orientation seminars are held each year.

NORTHWEST AVIATION CONFERENCE AND TRADE SHOW

The Northwest Aviation Conference and Trade Show returns to the Puyallup Fairgrounds on February 23 and 24, 2002. Now in its 18th year, the Conference is free, features an aviation trade show with 100 vendors, and seminars featuring some of the best lecturers in the country. Full details on the event will appear in the January issue of AeroSafe. For now, save that weekend!

ADDRESS CHANGE?

The address list is stored in a BIG computer at the Home Office in Oklahoma City. They are the ones to notify of any address changes so we can continue to bring you AeroSafe and other good stuff.

FAA Airman Certification Branch
Box 25082
Oklahoma City, OK 73125

AEROSAFE

May you always find VFR and tailwinds

